

CONNECTION ESTABLISHMENT

TECHNICAL FIELD

[0001] The present application relates generally to wireless communication, more particularly to triggering actions relating to immediate connection establishment based on information received from a discovered device.

BACKGROUND

[0002] Modern society has adopted, and is becoming reliant upon, wireless communication devices for various purposes, such as, connecting users of the wireless communication devices with other users. Wireless communication devices can vary from battery powered handheld devices to stationary household and/or commercial devices utilizing an electrical network as a power source. Due to rapid development of the wireless communication devices a number of areas capable of enabling entirely new types of communication applications have emerged.

[0003] In order to communicate with another device, a wireless communication device needs to first detect the other device, to which a communication connection is preferred. After device detection, a wireless communication link may be established between the devices. While established wireless communication links allow devices to exchange information, setting the devices to device detection state in order to initiate device discovery for establishing of the wireless communication link typically requires user input.

SUMMARY

[0004] Various aspects of examples of the invention are set out in the claims.

[0005] According to a first aspect of the present invention, a method is provided comprising receiving, at an apparatus, one or more device discovery response messages, the one or more device discovery response messages including information regarding source device of the respective message; determining, by the apparatus, whether any of the one or more received device discovery response messages includes a predefined indication; and selecting, by the apparatus, when determining that one or more of the received device discovery response message includes the predefined indication, source device of the one or more device discovery response messages including the predefined indication for immediate connection establishment.

[0006] According to a second aspect of the present invention, a computer program product is disclosed, adapted to cause performing of the method according to the first aspect when said program is run on a computer.

[0007] According to a third aspect of the present invention, an apparatus is disclosed, comprising at least one processor and at least one memory including executable instructions, the at least one memory and the executable instructions being configured to, in cooperation with the at least one processor, cause the apparatus to perform at least the following: Receive one or more device discovery response messages, the one or more device discovery response messages including information regarding source device of the respective message; determine whether any of the one or more received device discovery response messages includes a predefined indication; and select, in response to the determination that one or more of the received device discovery response messages includes the

predefined indication, source device of the one or more device discovery response messages for immediate connection establishment.

[0008] According to a fourth aspect of the present invention, a method is disclosed, comprising monitoring output of at least one sensor at an apparatus; determining, by the apparatus, whether any of the monitored sensor output satisfies predefined response criteria; and transmitting a device discovery response message including a predefined indication in response to detecting a device discovery message within a predefined time period after determination of a sensor output satisfying the predefined response criteria.

[0009] According to fifth aspect of the present invention, a computer program product is disclosed, adapted to cause performing of the method according to the fourth aspect when said program is run on a computer medium.

[0010] According to a sixth aspect of the present invention, an apparatus is disclosed, comprising at least one processor and at least one memory including executable instructions, the at least one memory and the executable instructions being configured to, in cooperation with the at least one processor, cause the apparatus to perform at least the following: Monitor output of at least one sensor at the apparatus; determine whether any of the monitored sensor output satisfies predefined response criteria; and transmit a device discovery response message including a predefined indication in response to detecting a device discovery message within a predefined time period after determination of a sensor output satisfying the predefined response criteria.

[0011] The foregoing summary includes example embodiments of the present invention that are not intended to be limiting. The above embodiments are used merely to explain selected aspects or steps that may be utilized in implementations of the present invention. However, it is readily apparent that one or more aspects, or steps, pertaining to an example embodiment can be combined with one or more aspects, or steps, of other embodiments to create new embodiments still within the scope of the present invention. Therefore, persons of ordinary skill in the art would appreciate that various embodiments of the present invention may incorporate aspects from other embodiments, or may be implemented in combination with other embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] For a more complete understanding of example embodiments of the present invention, reference is now made to the following descriptions taken in connection with the accompanying drawings in which:

[0013] FIG. 1 discloses an example of operational environment in which apparatuses according to an example embodiment of the invention may be used;

[0014] FIG. 2 illustrates an example Bluetooth™ communication protocol based device discovery with Extended Inquiry Response (EIR) procedure usable in accordance with at least one example embodiment;

[0015] FIG. 3 illustrates example data formats of information included in Frequency Hopping Synchronization (FHS) and Extended Inquiry Response (EIR) packets, usable in accordance with at least one example embodiment.

[0016] FIG. 4 discloses a modular layout for an example apparatus according to an example embodiment of the present invention;